

A Synopsis of the Studies Supporting an Association between Marijuana Use and the Subsequent Onset of Anxiety, Depression, Panic, Bipolar Disorder, Lack of Educational Achievement and Acts of Suicide

Zuardi AW, Shirakawa I, Finkelfarb E, Karniol IG. Action of cannabidiol on the anxiety and other effects produced by delta 9-THC in normal subjects. *Psychopharmacology (Berl)*. 1982;76(3):245-50.

“after ingestion of Δ 9-THC the volunteers experienced a large increase in the level of **anxiety**, which agrees with various previous descriptive reports”.

Patton GC, Coffey C, Carlin JB, Degenhardt L, Lynskey M, Hall W. Cannabis use and mental health in young people: cohort study. *BMJ*. 2002;325(7374):1195-8.

“Daily use in young women was associated with an over fivefold increase in the odds of reporting a state of depression and anxiety after adjustment for intercurrent use of other substances (odds ratio 5.6, 95% confidence interval 2.6 to 12). Weekly or more frequent cannabis use in teenagers predicted an approximately twofold increase in risk for later **depression and anxiety** (1.9, 1.1 to 3.3) after adjustment for potential baseline confounders. In contrast, depression and anxiety in teenagers predicted neither later weekly nor daily cannabis use.”

Hayatbakhsh MR, Najman JM, Jamrozik K, Mamun AA, Alati R, Bor W. Cannabis and anxiety and depression in young adults: a large prospective study. *J Am Acad Child Adolesc Psychiatry*. 2007;46(3):408-17.

“The relationship between early-onset and frequent use of cannabis and symptoms of AD is independent of individual and family backgrounds. Frequent cannabis use is associated with increased AD (**anxiety** disorder) in young adults independently of whether the person also uses other illicit drugs.”

Hasin DS, Keyes KM, Alderson D, Wang S, Aharonovich E, Grant BF. Cannabis withdrawal in the United States: results from NESARC. *J Clin Psychiatry*. 2008;69(9):1354-63.

“The symptoms formed two factors, one characterized by weakness, hypersomnia, and psychomotor retardation, and the second by **anxiety**, restlessness, **depression**, insomnia. Both symptom types were associated with significant distress/impairment ($p < .01$), substance use to relieve/avoid cannabis withdrawal symptoms ($p < .01$), and quantity of cannabis use (among the cannabis-only users $p < .05$).”

Medina KL, Shear PK. Anxiety, depression, and behavioral symptoms of executive dysfunction in ecstasy users: contributions of polydrug use. *Drug Alcohol Depend*. 2007 Mar 16;87(2-3):303-11.

“This is consistent with more recent research indicating that **anxiety** symptoms observed in ecstasy polydrug users is likely due to comorbid marijuana use.”

Zvolensky MJ, Coughle JR, Johnson KA, Bonn-Miller MO, Bernstein A. Marijuana use and panic psychopathology among a representative sample of adults. *Exp Clin Psychopharmacol*. 2010;18(2):129-34.

“Results indicated that cannabis use and dependence were significantly prospectively associated with an increased odds for the development of **panic** attacks and **panic disorder**.”

Thomas H. A community survey of adverse effects of cannabis use. *Drug Alcohol Depend*. 1996 Nov;42(3):201-7.

“The most common physical or mental health problems, experienced by 22% of users were acute **anxiety or panic attacks** following cannabis use.”

Dannon PN, Lowengrub K, Amiaz R, Grunhaus L, Kotler M. Comorbid cannabis use and panic disorder: short term and long term follow-up study. *Hum Psychopharmacol*. 2004 Mar;19(2):97-101.

“Twenty four patients experienced their first **panic attack** within 48h of cannabis use and then went on to develop PD (panic disorder).”

Silins E, Horwood LJ, Patton GC, Fergusson DM, Olsson CA, Hutchinson DM, Spry E, Toumbourou JW, Degenhardt L, Swift W, Coffey C, Tait RJ, Letcher P, Copeland J, Mattick RP, for the Cannabis Cohorts Research Consortium. Young adult sequelae of adolescent cannabis use: an integrative analysis. *Lancet Psychiatry* 2014; 1(4): 245-318.

“After covariate adjustment, compared with individuals who had never used cannabis, those who were daily users before age 17 years had clear **reductions in the odds of high school completion** (adjusted odds ratio 0.37, 95% CI 0.20–0.66) and degree attainment (0.38, 0.22–0.66), and substantially increased odds of later cannabis dependence (17.95, 9.44–34.12), use of other illicit drugs (7.80, 4.46–13.63), and **suicide attempt** (6.83, 2.04–22.90).”

Clarke MC, Coughlan H, Harley M, Connor D, Power E, Lynch F, Fitzpatrick C, Cannon M. The impact of adolescent cannabis use, mood disorder and lack of education on attempted suicide in young adulthood. *World Psychiatry*. 2014;13(3):322-3.

“adolescent cannabis use increased the odds of a **suicide attempt** 7-fold”

Arendt M, Munk-Jørgensen P, Sher L, Jensen SO. Mortality following treatment for cannabis use disorders: predictors and causes. *J Subst Abuse Treat*. 2013;44(4):400-6.

“**Suicide** occurred five times as frequently during follow-up in our sample compared with individuals from the general population.”

Kvitland LR, Melle I, Aminoff SR, Lagerberg TV, Andreassen OA, Ringen PA. Cannabis use in first-treatment bipolar I disorder: relations to clinical characteristics. *Early Interv Psychiatry*. 2014 Apr 17. doi: 10.1111/eip.12138. [Epub ahead of print]

“After controlling for possible confounders of the relationship between age at onset and recent use (Table 3), we found that recent use contributed significantly to age at onset of first manic episode, age at onset of first psychotic episode and to age at onset of first depressive episode..... We found an even stronger association between lifetime **suicide** attempts and recent use after controlling for possible confounders (odds ratio 9.57, $p < 0.01$).”